

19th Century Society: Urbanization and Intellectual Movements (1800-1914)

Theme: By 1900 much of Europe had become urban and industrial

Use space below for notes

- I. "Second" Industrial Revolution (last half of the 19th century)
 - A. First Industrial Revolution had occurred between 1780-1850 – textiles, coal, iron, railroads
 - B. **Second Industrial Revolution:** Four major aspects
 1. Steel production: steel rails, larger structures, heavy machinery
 - **Bessemer process** resulted in high-quality steel
 2. Oil: kerosene for lighting; internal combustion engine for factory machines
 3. Electricity: increasingly powered cities
 - a. England built first electric power stations in 1881
 - b. Steel, textile, shoemaking and construction industries increasingly used electricity
 4. Chemicals: Germany led in photo processing and other areas such as dyes, soaps and pharmaceuticals; also fertilizers and explosives
 - C. Expansion of industry and technology created growing demand for experts with specialized knowledge.
 1. Science and technology became closely linked
 2. Professionals: Engineering, architecture, chemistry, accounting and surveying.
 3. Management of large public and private institutions also emerged as a profession
 - D. By 1890s Germany became most powerful industrial economy in Europe (surpassing Britain)
 1. Britain's huge investment in technology early on meant that it was more difficult to shift to new techniques of the Second Industrial Revolution.
 2. Germany came into industrialization later and was able to utilize state-of-the-art technology.
 - Germany thus led Europe in production of organic chemicals and power generators
 - E. Industrialism continued to attract huge numbers of workers to cities
 - By 1900 over half of industrial workers in Britain, Germany and Belgium worked for companies with more than twenty workers.

II. Urbanization

A. Population growth

1. Britain was the first large European country to experience urban growth
 - a. Over 50% of population in 1891 lived in urban areas
 - b. London was by far the largest city in Europe.
2. Population of Europe increased by 50% between 1870 and 1914
 - a. By 1900, 9 European cities had populations over 1 million
 - b. Significant decline in mortality rates, especially among children
 - c. Birth rates actually fell during the period (e.g. France)
3. Better medical knowledge, better nutrition and housing were key reasons
4. Number of children per family fell, though this trend was more pronounced in the middle class

B. Poor living conditions during the first half of the 19th century

1. Parks and open spaces were almost nonexistent
2. Many people lived in extremely overcrowded attics or cellars (as many as 10 people per room)
3. Open drains and sewers flowed along the streets with garbage and excrement
4. Total absence of public transportation

C. Public health movement

1. Sought to remedy the high disease and mortality rate that occurred in cities
2. **Edwin Chadwick** became most important reformer of living conditions in cities.
 - a. Influenced by **Jeremy Bentham's utilitarianism**: idea of "greatest good for greatest number"
 - b. Saw disease and death as primary causes of poverty
 - c. "Sanitary idea" most important: believed disease could be prevented by cleaning up the urban environment
 - Adequate supply of clean piped water would carry off excrement of communal outhouses.
 - Would cost only 1/20 of removing it by hand.

Use space below for notes

- d. Britain (which suffered a cholera epidemic in the early 1830s), passed its first public health law in 1848.
 - Germany, France and U.S. also adopted Chadwick's ideas.
- e. By 1860s and 1870s many European cities had made significant progress in public sanitation

Use space below for notes:

D. Urban planning & public transportation

- 1. France took the lead during reign of Napoleon III
 - a. **Georges von Haussmann** redeveloped Paris:
 - Wide boulevards (partially to prevent barricades)
 - Better middle-class housing on the outskirts of the city
 - Demolition of slums
 - Creation of parks and open spaces.
 - b. New system of aqueducts doubled fresh water supply and 400 miles of underground sewers were built (in response to cholera epidemics in 1832 & 1849).
 - c. Cities such as Vienna, Cologne followed Paris' lead.
- 2. Mass transportation
 - a. By 1890s the **electric streetcar** had revolutionized city transportation
 - Created suburbs on outskirts
 - Electricity led to the creation of London's subway system in the 1860s and then Paris' *metro* in 1900.
 - b. By 1900, only 9% of Britain's urban population was overcrowded (more than 2 per room)

E. Migration and emigration

- 1. Significant migration to cities from the countryside continued although migrants often maintained a connection to their rural areas.
- 2. Huge numbers of southern and eastern Europeans migrated to America's largest cities after 1880 in search of economic opportunity.
 - a. Canada and Latin America were also major destinations
 - b. Jews in eastern Europe fled the persecution of the Pogroms.
 - c. In some areas, agricultural challenges forced people to search for other opportunities.

III. Social structure as a result of the industrial revolution and urbanization

- A. Increased in standard of living occurred by the 2nd half of 19th century
 1. Gap between the wealthy and working class still huge
 2. This period became the "golden age of the middle class"
 3. In Britain, wages and consumption increased 50% between 1820 and 1850.
- B. Expansion of industry and technology created growing demand for experts with specialized knowledge.
 1. Professionals: Engineering, architecture, chemistry, accounting and surveying.
 2. Managers: Management of large public and private institutions.
 3. Expanded and diversified the lower middle class.
 - a. Number of independent, property-owning shopkeepers and small business people grew.
 - b. Increase in white-collar employees: salesmen, bookkeepers, store managers, and clerks.
- C. Industrial and urban development made society more diverse and less unified.
 1. Diversity within middle class/bourgeoisie
 - a. About 15-20% of population in western Europe
 - Less in eastern Europe (2% in Russia); nobles dominated business
 - b. Upper-middle class: bankers, industrial leaders, large-scale commerce, top gov't officials
 - Employed several servants
 - c. Diversified middle class: smaller businessmen, professionals, merchants, doctors, lawyers, civil servants
 - Employed at least one servant as a cook and maid
 - d. Lower-middle class (**petite bourgeoisie**): independent shopkeepers and small merchants, store managers, minor civil servants, teachers, clerks, and some master craftsmen such as goldsmiths
 - Grew from about 7% of population to 20% in 1900
 - Women worked as department store clerks, stenographers, secretaries, waitresses and nurses.
 - Held more than half of post office and gov't clerical jobs in 1911

2. Characteristics of the middle class

- a. Believed strongly in classical liberalism and sought protection of property in constitutional assemblies (e.g. British Parliament and the French Chamber of Deputies)
 - b. Gained political influence though increased landownership that was tied to voting rights
 - c. Emphasized individual liberty and respectability based on economic success
 - Expanding the family's fortune was seen as the clearest means of respectability
 - d. Families emphasized frugality and planning for the future
 - e. Saw family as the foundation of the social order
 - f. Education and religion (especially evangelical Protestantism in England, Netherlands and some German states and Catholicism in France) were seen as extremely important
 - g. Strong feelings of nationalism
3. Working class: about 80% of population
- a. Many were peasants and hired hands (especially in eastern Europe)
 - b. Less unified and homogenous compared to middle classes
 - c. Highly skilled workers were at the top of working class (about 15% of pop.): "labor aristocracy"
 - Construction bosses, foremen, highly skilled craftsmen
 - d. Semi-skilled workers: carpentry, bricklaying, successful factory workers
 - e. Unskilled workers and domestic servants (mostly women) were at the bottom.
 - By 1900, over half of working women were domestic servants in England
 - Children comprised about 14% of workers in British textile factories in 1874.

D. Changing family

- 1. Romantic love became the most important reason for marriage by 1850
 - a. Rising standard of living made it possible for people to marry at a younger age
 - b. Yet, economic status was still an important issue for the middle class, even after 1850
- 2. Middle class females were monitored extremely closely by parents
 - a. Chastity was paramount
 - b. Middle class boys not monitored nearly as much

3. High rate of illegitimacy decreased after 1850
 - High rate of premarital sex but more couples married if the girl became pregnant
 4. Fidelity in marriage was particularly emphasized in middle class
 5. Prostitution: middle and upper class men constituted most of the customers (married late)
 6. After 1850 the work of most wives was increasingly distinct and separate from their husbands.
 - a. Marked contrast with pre-industrial Europe where farming and cottage industry dominated and husbands and wives worked together.
 - b. Husbands became primary wage earners in factories or businesses
 - c. Child rearing was more child-centered with the wife dominating the home domain.
 - d. Middle-class women begin to organize and resist their second-class status to husbands
 - Demanded access to higher education and professional employment
 - Sought repeal of laws that denied women property ownership
- E. Child-rearing in middle-class families
1. Lower mortality rates for children resulted in parents becoming more emotionally involved in children's lives
 - a. High mortality rate in preindustrial Europe had often resulted in mothers becoming indifferent to their children (e.g. hiring wet nurses)
 - b. Now, mothers increasingly breastfed their children
 - c. Lower rate of illegitimacy
 - d. Fewer children abandoned to foundling hospitals
 2. Married couples decreased the number of children they had (especially the middle class)
 - a. Sought to provide more care to their children
 - b. This trend continued until after World War II
 3. Increase in books published on child-rearing
 4. Parents now much more intent on improving the economic and social condition of their children
- F. Child-rearing in working-class families
1. Unlike middle-class kids, working class children did not remain economically dependent on their families.
 2. Boys and girls went to work when they reached adolescence.
 3. Young working-class adolescents broke away from the family more easily when emotional ties became

oppressive.

4. In 20th century, middle-class youths would follow this pattern.

IV. Life in the **fin de siècle** (end of the century)

A. The **"Belle Époque"** (c. 1895-1914)

1. Increased standard of living in all industrialized countries
 - a. This period would later be remembered after World War I as the **"Belle Époque"** (the "good old days")
 - b. However, better living occurred much more in northern Europe (Britain, France and Germany) than in southern or eastern Europe.
 - c. People gradually enjoyed higher wages while the price of food declined.
 - In Britain, wages almost doubled between 1850 and 1900.
 - More money came to be spent on clothing
 - Meat consumption increased significantly
2. Increased leisure time resulted along with increased money to spend

B. Increased consumption

1. Sports attracted increased spectators and participants
 - a. Sports clubs grew significantly
 - b. Soccer (football), rugby, bicycle and automobile races, track and field
 - c. A huge bicycle craze swept western Europe in the 1890s
 - d. Increased numbers of women took part in bicycling and sports clubs
 - Women gradually abandoned the more restrictive clothing (e.g. corsets, whale-boned skirts) for dresses that allowed more movement
 - e. The emerging sports culture mirrored the growth of aggressive nationalism in the late-19th century
 - Some Social Darwinists believed that sports competition confirmed the superiority of certain racial groups
2. Cafés and taverns enjoyed increased patronage in cities and towns
3. Department stores grew significantly
 - Frequented by the middle-class
4. In Paris, dance halls, concerts and plays drew thousands of people each week.

C. New inventions marked the era

1. Telephone
2. Automobile
3. Gramophone (record player)
4. Radio (invented by Marconi)
5. Motion pictures

D. Education

1. State's role in education increased, leading to further secularization of society
 - a. Emphasized loyalty and service to the state while decreasing the influence of organized religion
 - b. By 1900 in England, all children five to twelve years old were required to attend primary school
 - Education was free
 - c. In France, the Ferry Laws required children ages 3-13 to attend primary schools; schools were free.
2. Significant increase in literacy
 - a. Men had higher rates of literacy than women
 - b. Urbanites were more literate than rural folk
 - c. Higher literacy rate in northern and western Europe than in southern or eastern Europe
 - 1900: 99% literacy in Germany compared to 25% in Russia
3. Girls had less access to secondary education than boys, though schools for girls grew somewhat
 - a. Families had to pay the cost
 - b. Education was seen as a means of improving economic and marriage prospects for girls

V. Scientific Advances

- A. Scientific ideas and methods enjoyed huge popularity and prestige in the public mind after 1850.
 1. To many, science became almost a religion
 2. People could see how the link between science and technology improved their quality of life (e.g. electricity and better medical care)
- B. Bacterial revolution
 1. Significant in reducing the mortality rate
 2. **Louis Pasteur** (1822-1895) developed germ theory of disease
 - a. **Pasteurization:** fermentation caused by growth of living organisms and the activity of these organisms could be suppressed by heating the beverage.
 - b. New knowledge helped reduce food poisoning

3. **Joseph Lister** developed “antiseptic principle” in performing surgeries.
 - Resulted in far fewer people dying of infection resulting from surgeries.
 4. Diseases such as typhoid, typhus, cholera, and yellow fever were now under control due to improved availability of vaccines
- C. **Dmitri Mendeleev** (1834-1907): organized the rules of chemistry by devising the **periodic table** in 1869.
- D. **Electromagnetism: Michael Faraday** (1791-1867)
1. Basic discoveries on electromagnetism in the 1830s and 1840s resulted in the first dynamo (generator)
 2. Applied to development of electric motors, electric lights, and electric streetcars.
- E. **August Comte** (1798-1857): father of “sociology”
1. **Positivism:** All intellectual activity progresses through predictable stages; thus humans would soon discover the eternal laws of human relations through the study of sociology.
 2. Believed social scientists could help regulate society for the benefit of most everyone
 3. Comte became the leader in the religion of science and desire for rule by experts
- F. **Charles Darwin:** *On the Origin of Species by the Means of Natural Selection*, 1859
1. **Theory of evolution:** All life had gradually evolved from a common ancestral origin in an unending “struggle for survival”; species most able to adapt survived.
 2. Impact on religion: Darwin’s theory refuted literal interpretation of the Bible (Book of Genesis)
 - Created a crisis in some churches
 3. **Thomas Huxley** became Darwin’s biggest supporter (“Darwin’s Bulldog”)
 4. **Social Darwinism: Herbert Spencer** applied Darwin’s ideas to human society
 - a. **“Survival of the fittest”:** natural laws dictated why certain people were successful and others were not.
 - b. Later used by imperialists to justify the conquest of weaker peoples
 - c. Also used by major industrialists to justify their wealth while so many others struggled for subsistence

- d. Spencer's ideas were particularly popular among the upper-middle class.

G. Sigmund Freud (1856-1939)

1. Considered one of the three giants of 19th-century thought (along with Darwin and Marx)
2. In contrast to the rationalism of the Enlightenment, Freud believed that humans were largely irrational creatures
 - a. The human subconscious (the "ID") was not subject to reason
 - b. Thus, people were not as in control of themselves as many liked to believe
3. Freud also emphasized that sexuality was a key driving force in one's psychological make-up
 - Repressed sexual desires would lead to psychological problems
4. Freud was the founder of psychoanalysis
 - a. Believed hysteria of his patients originated in unhappy early childhood experiences where they had repressed strong feelings.
 - b. Under hypnosis or through the patient's free association of ideas, the patient could be brought to understand his/her unhappiness to deal with it.

H. New Physics

1. **Marie Curie** (1867-1934) & Pierre Curie (1859-1906)
 - Discovered the first radioactive element (radium) in 1910
2. **Ernest Rutherford** (1871-1937)
 - Split the atom in 1919: postulated the structure of the atom with a positively charged nucleus and negatively charged electrons
3. **Max Planck** (1858-1947)
 - a. Quantum theory: subatomic energy is emitted in uneven little spurts called "quanta," not in a steady stream, as previously thought.
 - Laws governing the universe now seemed unpredictable
 - b. Thus, matter and energy might be different forms of the same thing.
 - c. Shook the foundations of 19th century physics that viewed atoms as the stable, indestructible building blocks of matter.

4. **Albert Einstein** (1879-1955)
 - a. 1905, **Theory of relativity** of time and space challenged traditional ideas of Newtonian physics.
 - Theorized that time and space are relative to the viewpoint of the observer and only the speed of light is constant for all frames of reference in the universe.
 - b. United an apparently infinite universe with the incredibly small, fast-moving subatomic world.
 - **$E = mc^2$** : Matter and energy are interchangeable and that even a particle of matter contains enormous levels of potential energy.
- I. Impact of new scientific theories on the European mind
 1. Darwinism further challenged the Bible's account of the creation of humans
 2. Freudian psychology undermined the belief that humans were rational beings in control of their emotions
 3. Impact of the New Physics
 - a. Shattered the popular belief that the universe could be easily explained via Newtonian physics
 - Challenged long-held ideas since Newton that all particles interacted based on gravitational force
 - Einstein's theory of relativity now theorized that universal laws were "relative"—based on the position of the observer
 - b. Scientists realized that they knew less about the universe than previously thought
 4. Uncertainty later fed the pessimism of European society in the wake of World War I

VI. Catholic challenges in a modern world

- A. Nationalism in some countries decreased the influence of the Catholic church.
 1. Bismarck in Germany attacked the Catholic church in his *kulturkampf* crusade.
 2. Nation building in Germany and Italy may have competed for people's loyalties to the church.
- B. The rise of liberalism in the 19th century seemed to further distance the papacy from society.
 1. **Syllabus of Errors**, issued by Pope Pius IX in 1864, condemned liberalism and Italian unification
 2. The First Vatican Council in 1870 proclaimed the doctrine of papal infallibility stating that the pope, in certain cases, was speaking divinely revealed truth on religious matter.

- C. The increased popularity of rationalism and science caused alarm within the church.
 - The rise of Darwinism further challenged traditional Christianity as science increasingly seemed to answer many of life's mysteries
- D. **Rerum Novarum (1891)**
 - 1. Pope Leo XIII sought to permit Catholics to participate in the politics of liberal states
 - 2. He condemned socialism and Marxism while he defended private property (capitalism)
 - 3. Yet, he stated that workers should have a living wage and that capitalists should do more to provide for the welfare of their employees.
 - 4. He supported laws that protected workers from exploitation
 - 5. His pronouncement led to the creation of Catholic parties and trade unions at the turn of the century
- E. Decline in church attendance
 - 1. Most pronounced in the working classes and skilled workers.
 - 2. Upper and middle classes and the peasantry remained maintained church attendance
 - 3. Increasingly, men were less likely to attend church than women.

VII. Realism

- A. Characteristics
 - 1. Belief that literature and art should depict life as it really was.
 - 2. Largely a reaction to the failed Revolutions of 1848-49 and subsequent loss of idealism
- B. Realism in Literature
 - 1. France saw the development of the realist movement
 - a. **Honoré de Balzac** (1799-1850): *The Human Comedy* -- depicts urban society as grasping, amoral, and brutal, characterized by a Darwinian struggle for wealth and power
 - b. **Gustave Flaubert** (1821-1880): *Madame Bovary*
 - Portrays the provincial middle class as petty, smug, and hypocritical
 - c. **Émile Zola** (1840-1902): giant of realist literature
 - Portrayed seamy, animalistic view of working-class life
 - **Germinal** (1885): Depicts the hard life of young miners in northern France.
 - 2. England:
 - a. **George Eliot** (Mary Ann Evans) (1819-1880)--

examined ways in which people are shaped by their social class as well as their own inner strivings, conflicts, and moral choices.

- b. **Thomas Hardy** (1840-1928): *Tess of the d'Urbervilles*
 - Portrayed a woman who was ostracized for having pre-marital sex
3. Russia: **Leo Tolstoy** (1828-1910) – greatest Russian realist
 - a. Fatalistic view of history but regards love, trust, and everyday family ties as life's enduring values
 - b. *War and Peace* (1865-69) was his masterpiece
 - Story of Russian society during the Napoleonic wars
4. Scandinavia: **Henrik Ibsen** (1828-1906) – “father of modern drama”
 - His plays examined the conditions of life and issues of morality, often at odds with the Victorian views of the day

C. Realism in Art

1. Characteristics
 - a. The most important artists of the 19th century and 20th centuries created art for “art’s sake.”
 - This includes the Romantic period
 - Rather than depending on patrons to fund their works (e.g. the Church, nobles) they exercised virtual artistic freedom and hoped to make their money by selling their paintings to the public
 - This is in stark contrast to the Renaissance or the Baroque periods where artists were commissioned by elites who specified what they wanted the art to look like
 - France was the center of the art world. Artists sent their greatest works to the Paris Salon to be judged by a panel of distinguished figures from the art world.
 - b. France dominated realist art movement
 - c. Realists sought to portray life as it really was; not idealized
 - Ironically, many of the great realist works were rejected by the Salon for what was perceived to be mundane subject matter and crude artistic technique
 - d. Ordinary people became the subject of numerous paintings

2. **Gustave Courbet** (1819-1877)
 - a. Coined the term, "realism"
 - b. *The Stone Breakers*, 1849 (see right)
3. **Francois Millet** (1814-1875)
 - ***The Gleaners***, 1857: Depicts farm women gleaning the fields after the harvest (see right)
4. **Honore Daumier** (1808-1879)
 - ***Third-Class Carriage***, 1862: Depicts a grandmother, a daughter and her infant traveling on a railroad. This is a good example of how the railroad impacted the lives of peasants, making it possible for them to move or travel to cities
5. **Edgar Degas** (1834-1917)
 - *Laundry Girls Ironing*, c. 1884: Depicts ordinary women performing unskilled labor (see right)
6. **Édouard Manet** (1832-1883)
 - a. French realist and impressionist painter who bridged both movements
 - b. Considered the first "modernist" painter
 - c. ***Le Déjeuner sur l'herbe*** (*Luncheon on the Grass*), 1863
 - Shocked audiences by portraying a female nude and two male clothed companions in an everyday park setting
 - d. *Olympia*, (1863) seemed equally revolting to the Salon for its casual nude portrayal of a prostitute

VIII. Impressionism in painting

A. Characteristics

1. Began in France
2. Impact of photography: now that cameras could accurately capture a subject, artists now moved away from trying to perfectly capture an image
3. Painters sought to capture the momentary overall feeling, or impression, of light falling on a real-life scene before their eyes.
 - Focused especially on landscapes
 - Paintings were completed very quickly
 - Brushstrokes were highly visible
 - Advent of oil paints in tubes made outdoor painting possible (*plein-air* painting)
 - In the past, the vast majority of paintings were done in the studio

B. Claude Monet (1840-1926)

1. Foremost impressionist painter
2. ***Impression Sunrise***, 1873: considered first impressionist painting
3. Perhaps most well known for his "series paintings" of



Courbet, *The Stone Breakers*



Millet, *The Gleaners*



Third Class Carriage



Degas, *Laundry Girls Ironing*



Manet, *Le Déjeuner sur l'herbe*



Monet, *Impression Sunrise*

- the countryside at Giverny (e.g. water lilies)
- C. **Pierre-Auguste Renoir** (1841-1919)
1. ***Le Bal au Moulin de la Galette***, 1876
 2. In addition to landscapes, he painted subjects in candid poses and nude figures
- D. **Camille Pissarro** (1830-1903)
- Considered by some to be the true father of impressionism
- E. Impressionism gave way to Post-Impressionism later in the 19th century
- IX. Post-Impressionism and early-20th century Art
- A. Characteristics of **Post-Impressionism**
1. Desire to know and depict worlds other than the visible world of fact.
 - a. Sought to portray unseen, inner worlds of emotion and imagination (like early-19th century romantics).
 - b. Sought to express a complicated psychological view of reality as well as an overwhelming emotional intensity (like modern novelists).
 - c. Cubism concentrated on zigzagging lines and overlapping planes.
 - d. Nonrepresentational art focused on mood, not objects.
 - e. Fascination with form, as opposed to light.
- B. Major Post-Impressionist artists
1. **Vincent van Gogh** (1853-1890) – Dutch expressionist
 - a. In ***The Starry Night*** (1889), he painted the vision of night as he imagined it, not as it really was. (See right)
 - b. One of his most famous portraits shows him with a bandage on his ear after he allegedly cut it off: ***Self-Portrait with Bandaged Ear***, 1889 (See right)
 2. **Paul Gauguin** (1848-1903) – French
 - a. Pioneered expressionist techniques.
 - b. Saw form and design of a painting as important in themselves
 - c. Became famous for his paintings of the South Pacific where he spent some time (See right)
 3. **Paul Cézanne** (1839-1906)
 - a. Particularly committed to form and ordered design.
 - b. Later works became increasingly abstract and



Renoir, *Le Bal (Dance) au Moulin de la Galette*



Pissarro, *Garden at Pontoise*, 1877



Van Gogh, *The Starry Night*



Van Gogh, *Self-Portrait*



Gauguin, *Where Do We Come From? What Are We? Where Are We Going?*, 1897

nonrepresentational; also moved away from the traditional 3-dimensional perspective toward the 2-dimensional plane. (See below, right)

C. **Henri Matisse** (1869-1954)

1. Most important French artist of the 20th century
2. Expressionism of a group of painters led by Matisse was so extreme that an exhibition of their work in Paris prompted shocked critics to call the **les fauves**—“the wild beasts.”
3. Matisse and his followers painted real objects, but their primary concern was the arrangement of color, line, and form as an end in itself.

D. **Pablo Picasso** (1881-1973) – Spanish

1. Most important artist of the 20th century
2. Founded **Cubism** in 1907.
3. **Les Femmes d'Alger (O.J.)** (1907) is considered the first cubist masterpiece.
4. Cubism (also known as analytical cubism) concentrates on a complex geometry of zigzagging lines and sharply angled, overlapping planes. (See *The Accordionist*, next page, right)
5. Picasso worked with **Georges Braque** (1882-1963) in developing analytical cubism (See Braque's *Violin and Candlestick*, right)

E. **Expressionism:** In 1910 came the ultimate stage in the development of abstract, nonrepresentational art.

- Russian painter, **Wassily Kandinsky** (1866-1944), turned away from nature completely with his non-figural paintings. Colors were used to express emotion and symbolism but not any recognizable form. (See right)



Cézanne, *Apples and Oranges*, c. 1899



Picasso, *The Accordionist*, 1911



Braque, *Violin and Candlestick*, 1910



Kandinsky, *Composition VII*, 1913

Terms to Know

Second Industrial Revolution	Honoré de Balzac
urbanization	Gustave Flaubert
Public Health Movement	Thomas Hardy
Edwin Chadwick	Emile Zola
"sanitary idea"	George Eliot
Georges von Haussmann	Leo Tolstoy
fin de siècle	Henrik Ibsen
"Belle Époque"	Gustav Courbet
Louis Pasteur, germ theory	Francois Millet, <i>The Gleaners</i>
pasteurization	Honore Daumier, <i>Third-Class Carriage</i>
Joseph Lister	Edgar Degas
Dmitri Mendeleev	Edouard Manet, <i>Le Déjeuner sur l'herbe ;Olympia</i>
Michael Faraday, electromagnetism	Impressionism
August Comte	Claude Monet, <i>Impression Sunrise</i>
positivism	Pierre-Auguste Renoir, <i>Le Moulin de la Galette</i>
Charles Darwin, <i>On the Origin of Species</i>	Vincent van Gogh, <i>Starry Night</i>
Thomas Huxley	Paul Gauguin
Hebert Spencer, Social Darwinism	Paul Cézanne
Sigmund Freud	Henri Matisse, <i>les fauves</i>
Marie Curie	Pablo Picasso, <i>Les Madamoselle d'Avignon</i>
Ernest Rutherford	Cubism
Max Planck	Expressionism
Albert Einstein	Wassily Kandinsky
theory of relativity	
<i>Rerum Novarum</i>	
Realism	

Essay Questions

Note: This sub-unit is a medium probability area for the AP exam. In the past 10 years, 8 questions have come wholly or in large part from the material in this chapter. Below are some practice questions that will help you study the topics that have appeared on previous exams or may appear on future exams.

1. Compare and contrast the "first" and "second" industrial revolutions.
2. Analyze ways in which urbanization impacted European society in the 19th century.
3. How did the industrial revolution and urbanization impact Europe's social structure.
4. Analyze the forces that caused the family to change in the 19th century.

5. How did scientific advances in the late-19th century challenge the ways Europeans viewed the world?
6. Analyze how Realism, Impressionism and Post-Impressionism reflected European society in the late-19th and early 20th centuries.

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